SECURITY INFORMATION

CENTRAL INTELLIGENCE AGENCY

Approved For Release 2001/12/04 : CIA-RDP82-00457R007600500001-6

INFORMATION REPORT

REPORT NO. [redacted]

CD NO. 25X1A

COUNTRY USSR (Moscow Oblast)

DATE DISTR. 6 March 1952

SUBJECT Aircraft Engine Plant No. 500 in Moscow-Tushino

NO. OF PAGES 3

25X1A

PLACE ACQUIRED [redacted]

NO. OF ENCLS. 2 (7 pages)@ (LISTED BELOW)

DATE OF INFO. [redacted]

SUPPLEMENT TO REPORT NO. 25X1X

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1. The aircraft engine plant with the Soviet designation Zavod 500 was located in Moscow-Tushino. (1) It was said that an air force colonel was plant manager. Two hundred to three hundred air force officers and about 20 civilians came to the plant every day. (2) The labor force during the fall of 1949 was 4,000, half of whom were women. The labor force did not seem quite sufficient for the full utilization of the available machinery. Work was done in three shifts, except for the auxiliary workshops which worked two eight-hour shifts. (3)

2. The plant produced five-cylinder radial engines until April or May 1948, when this production seems to have been temporarily discontinued, judging from the fact that radial engines in various stages of assembly were seen in storage. (4) The production of turbojet power units was started in May 1948. Completed turbo jet engines were never seen, but source recognized several units when he was shown pictures of the Rolls Royce Nene engine. The turbine shaft was about 75 cm long and 10 to 12 cm in diameter. A disc-shaped coupling, about 20 cm in diameter, was seen in the middle of the shaft. An average of 10 to 20 such shafts was observed with each railroad carload of aluminum scrap. (5) The turbine wheels were fitted with 40 to 50 blades, 25 cm long and 15 cm wide. The blade roots were about 10 mm thick and the blade ends about 5 mm thick. The turbine disc, about 30 cm in diameter, had a hole in the center. This hole, 3 or 4 cm in diameter, was apparently bushed with some shining material, but no projecting rim of a bushing could be determined at the front side of the turbine wheel. The shining part was faired into the cast section of the disc. Another turbine wheel observed was of the same type but had a total diameter of about 70 cm. (6)

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Document No. 1
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Class. Changed To: TS S C
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Date: 09 AUG 1978 By: 014

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Impeller wheels were seen among the scrap. The data on the production of these pieces were not obtained. Air intake units were also observed on the scrap dump. (7) Many combustion chambers were thrown on the scrap dumps. They showed cracks at the holes drilled in the sides. Outer casings of combustion chambers were the parts most often observed. It was noticed that at the bottom of these units bulged, so they could not stand up. These outer casings were 50 to 60 cm high, about 80 cm in diameter on top, and 30 to 35 cm in diameter at the bottom. The flange at the upper edge of the casing was 1.5 or 2 cm wide and had holes, about 0.5 cm in diameter, set at intervals of about 10 cm. Corresponding parts with holes set at matching intervals were also seen on the scrap dump. A hole in the side of the combustion chamber was 5 or 6 cm in diameter. It was stated that the units observed had a ridge 0.75 cm high, around the casing. This ridge was not noticed on the photograph.

4. Plavod 500 had two test stations. One of these stations had five test stands. Beginning in August 1948, day and night two of these stands were constantly in operation at one time. The testing of one motor unit lasted 4 or 5 hours. The testing speed, which was determined by the sound, changed every 10 to 30 minutes. The other test station with 12 stands had six of them in operation during the summer of 1948 testing radial engines. The first turbojet units were observed there in the fall of 1948. An average of 10 stands was in operation 16 hours daily testing jet engines during January and February 1949.

5. At the machine shop manufacturing shafts, wheels, and discs for jet engines, about two 60-ton railroad carloads of semi-finished products arrived every week. (8) Finished products from this shop were loaded on trucks and shipped to the assembly shop. (9) Similar observations were made at another machine shop, but no railroad cars were parked there. (10) Steel and aluminum parts were machined in Plavod 10. No conveyor belts were noticed in any workshop; however, source did not enter the assembly shop. Among the material delivered to the plant were wrought castings such as frames for the air intake, section aluminum, iron and steel, rolled aluminum sheets, aluminum and iron ingots, etc. Details on the quantities delivered were not available. Soviet workers said that iron and aluminum came from the Urals area. Railroad officials told [redacted] that the second iron came from Voronezh. All shipments arrived by rail. Completed jet engines were shipped by rail to an undetermined destination. [redacted] stated that they once observed returned crates with Chinese inscriptions. (11)

6. The plant was secured by a wooden fence and had civilian and military sentries. Air raid precautionary measures were not observed.

25X1A

[redacted] Comments.

(1) For location see Annex 1, which was prepared on the basis of an aerial photograph from 1945. New plant buildings constructed since then have also been indicated on the sketch.

(2) A Soviet colonel was repeatedly mentioned as plant manager. Furthermore it was stated by returning [redacted] that Russian officers were attached to the plant for technical training. The number reported, however, seems exaggerated.

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25X1A (3) This statement agrees with previous information. See [redacted]

(4) The plant produced double-row radial and in-line engines until early summer 1948, when it was converted to the production of turbojet engines. [redacted]

25X1A (5) For rotor assembly of the power plant, see Annex 2, sketch 1. The symbol "ø" stands for diameter.

(6) In previous reports, it was also mentioned that the plant produced two types of turbines, similar in shape, but different in dimensions. It is believed that the turbojet unit which was

25X1A stated to be shorter and less powerful in one report, is actually an improved version. See [redacted] This turbojet power plant is believed to be the standard engines installed in the MIG-15.

(7) For illustration of the intake unit see Annex 2, sketch 2.

(8) For location of this machine shop, see Annex 1, item No 45.

(9) For location of this assembly shop, see Annex 1, item No. 59.

(10) For location of this machine shop see Annex 1, item No 53.

(11) Empty crates are confirmed as being returned to the plant for

25X1A reconditioning. [redacted] As MiG-15s are flown in Korea, it is possible that the plant delivered jet engines for this type of aircraft to China.

Annexes:

1. Layout of Factory No. 500 at Moscow-Tushino with Legend
2. Sketches of Turbo-jet Power Plants

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